ABSTRACT

Methods and compositions for inhibiting and/or inactivating nucleases by employing nuclease inhibitors are provided. The nuclease inhibitors comprise anti-nuclease antibodies and non-antibody nuclease inhibitors. The anti-nuclease antibodies of the present invention may be a polyclonal or monoclonal antibodies, and may be anti-ribonuclease antibodies, anti-deoxyribonuclease antibodies, or antibodies to non-specific nucleases. A preferred embodiment comprises at least two nuclease inhibitors, and is referred to as a nuclease inhibitor cocktail. In some specific embodiments, the invention concerns methods of performing *in vitro* translation comprising obtaining a first nuclease inhibitor, which inhibitor is further defined as an anti-nuclease antibody, and placing the anti-nuclease antibody in an *in vitro* translation reaction. In many cases, the *in vitro* translation reaction comprises at least one nuclease, which may be a ribonuclease, a deoxyribonuclease, or a nonspecific nuclease. The invention also relates to kits for the performance of various microbiological procedures, which kits comprise the nuclease inhibitors described herein.